Abstract Submitted
for the MAR10 Meeting of
The American Physical Society

Hysteresis in the jamming of frictional granular disks ROBERT ECKE, MAHESH BANDI[1], MICHAEL RIVERA, Los Alamos National Laboratory — As a system of short, bi-dispersed disks are uniaxially compressed and decompressed, the global pressure exhibits hysteresis and the areal packing fraction at which the pressure begins to increase shifts slowly to higher values. The details of this process depend on the rate at which compression/decompression occurs and on the material making up the disks. We present experimental data on compression-decompression hysteresis for 4 different sets of 1900 disks with static friction coefficients between 0.05 and 0.25. Relationships of this hysteric behavior to similar hysteresis in porous sandstone rock and the implications of these phenomena to the theory of jamming are discussed.

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Date submitted: 18 Nov 2009 Electronic form version 1.4